SyncMaster 931CW / 906CW



Install driver

Windows

Install programs

Natural Color

MagicTune™

ImageViewer



- Safety Precautions
- Introduction
- Connections
- Using the Software
- Adjusting the Monitor
- Troubleshooting
- Specifications
- Information

Safety Precautions

Notation

Please read the following safety instructions as they are designed to prevent damage to property and harm to the user.

Warning / Caution



Failure to follow directions noted by this symbol could result in bodily harm or damage to the equipment.

Notational Conventions



Prohibited



Important to read and understand at all times



Do not disassemble



Disconnect the plug from the outlet



Do not touch



Ground to prevent an electric shock

Power



When not used for extended period of time, set your computer to DPMS.
If using a screen saver, set it to active screen mode.

The images here are for reference only, and are not applicable in all cases (or countries).

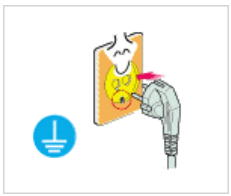
Shortcut to Anti-Afterimage Instructions

- Do not use a damaged or loose plug.
  - This may cause electric shock or fire.

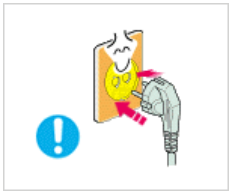




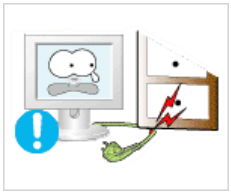
- Do not pull the plug out by the wire nor touch the plug with wet hands.
  - This may cause electric shock or fire.



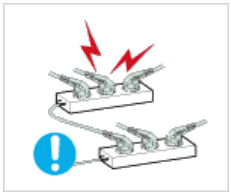
- Use only a properly grounded plug and receptacle.
  - An improper ground may cause electric shock or equipment damage. (Class I Equipment only.)



- Insert the power plug firmly so that it does not come loose.
  - A bad connection may cause fire.



- Do not bend the plug excessively and wire nor place heavy objects upon them, which could cause damage.
  - This may cause electric shock or fire.



- Do not connect too many extension cords or plugs to one outlet.
  - This may cause fire.



- Do not disconnect the power cord while using the monitor.
  - A surge may be caused by the separation and may damage the monitor.



- Do not use the power cord when the connector or plug is dusty.
  - If the connector or plug of the power cord is dusty, clean it with a dry cloth.
  - Using the power cord with a dusty plug or connector may cause an electric shock or fire.

- To disconnect the apparatus from the mains, the plug must be pulled out from the mains socket, therefore the mains plug shall be readily operable.



- This may cause electric shock or fire.

Installation



Be sure to contact an authorized Service Center, when installing your monitor in a location with heavy dust, high or low temperatures, high humidity, and exposed to chemical substances and where it operates for 24 hours such as at airports, train stations etc.

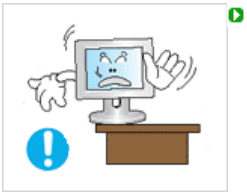
Failure to do so may cause serious damage to your monitor.



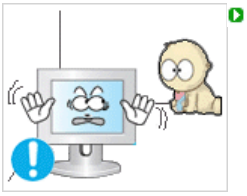
- Place your monitor in a location with low humidity and a minimum of dust.
  - Failure to do so may cause electric shock or fire inside the monitor.



- Do not drop the monitor when moving it.
  - This may cause damage to the product or the person carrying it.



- Install the monitor base in a showcase or shelf so that the end of the base does not protrude from the showcase or shelf.
  - Dropping the product may cause damage to the product or the person carrying it.



- Do not place the product on the floor.
  - Take care, as someone, specifically children may trip over it.



- Do not place the product on an unstable or small surface area.
  - Place the product on an even and stable surface, as the product may fall and cause harm to someone walking by, specifically children.



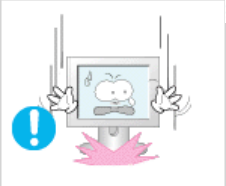
- TO PREVENT THE SPREAD OF FIRE, KEEP CANDLES OR OTHER OPEN FLAMES AWAY FROM THIS PRODUCT AT ALL TIMES.
  - Otherwise, this may cause fire.



- Keep any heating devices away from the power cable.
  - A melted coating may cause electric shock or fire.



- Do not install the product in places with poor ventilation, for instance, a bookshelf, closet, etc.
  - Any increase in the internal temperature may cause fire.



- Put down the monitor carefully.
  - Failing to do so may damage the monitor.



- Do not place the monitor face down.
  - This may damage the TFT-LCD surface.



- The installation of the bracket must be done by a qualified professional.
  - Installing the bracket by unqualified personnel may result in injury.
    Always use the mounting device specified in the owner's manual.



- When installing the product, make sure to keep it away from the wall (more than 10 cm/4 inches) for ventilation purposes.
  - Poor ventilation may cause an increase in the internal temperature of the product, resulting in a shortened component life and degraded performance.



- Do not disconnect the power cord while using the monitor.
  - A surge may be caused by the separation and may damage the monitor.



- Keep the plastic packaging (bag) out of children's reach.
  - The plastic packaging (bag) may cause suffocation if children play with it.

Cleaning and Using



When cleaning the monitor case or the surface of the TFT-LCD screen, wipe with a slightly moistened, soft fabric.



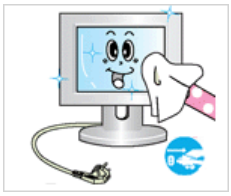
- Do not spray water or detergent directly onto the monitor.
  - This may cause damage, electric shock or fire.



- Use the recommended detergent with a smooth cloth.



- If the connector between the plug and the pin is dusty or dirty, clean it properly using a dry cloth.
  - A dirty connector may cause electric shock or fire.



- Make sure to unplug the power cord before cleaning the product.
  - Otherwise, this may cause electric shock or fire.



- Unplug the power cord from the power outlet and wipe the product using a soft, dry cloth.
  - Do not use any chemicals such as wax, benzene, alcohol, thinners, insecticide, air freshener, lubricant or detergent.



- Contact the SAMSUNG customer care center or Customer Center for interior cleaning once a year.
  - Keep the product's interior clean.
    Dust which has accumulated in the interior over an extended period of time may cause a malfunction or fire.

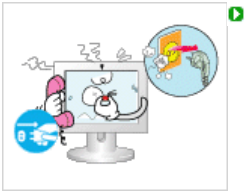
Notation Power Installation Cleaning and Using Others

Others

- Do not remove the cover (or back).



- This may cause electric shock or fire.
  Refer to a qualified servicing company.



- If your monitor does not operate normally - in particular, if there is any unusual sound or smell coming from the monitor - unplug it immediately and the Service Center.
  - This may cause electric shock or fire.



- Keep the product away from places exposed to oil, smoke or moisture; do not install inside a vehicle.
  - This may cause a malfunction, electric shock or fire.
    In particular, avoid operating the monitor near water or outdoors where it could be exposed to snow or rain.



- If the monitor is dropped or the casing is damaged, turn the monitor off and unplug the power cord. Then contact the Service Center.
  - The monitor may malfunction, causing electric shock or fire.



- Disconnect the plug from the outlet during storms or lightning or if it is not used for a long period of time.
  - Failure to do so may cause electric shock or fire.



- Do not try to move the monitor by pulling only the wire or the signal cable.
  - This may cause a breakdown, electric shock or fire due to damage to the cable.



- Do not move the monitor right or left by pulling only the wire or the signal cable.
  - This may cause a breakdown, electric shock or fire due to damage to the cable.



- Do not cover the vents on the monitor cabinet.
  - Bad ventilation may cause a breakdown or fire.

- Do not place water containers, chemical products or small metal objects on the monitor.



- This may cause a malfunction, electric shock or fire.
  If a foreign substance enters the monitor, unplug the power cord and contact the Service Center.



- Keep the product away from combustible chemical sprays or inflammable substances.
  - This may cause an explosion or fire.



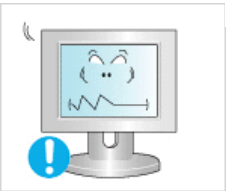
- Never insert anything metallic into the monitor openings.
  - This may cause electric shock, fire or injury.



- Do not insert metal objects such as chopsticks, wire and tools or inflammable objects such as paper or matches into the vent, headphone port or AV ports or etc.
  - This may cause electric shock or fire.
    If an alien substances or water enters the product, turn the product off, unplug the power connector from the wall outlet and contact the Service Center.



- When viewing a fixed screen for an extended period of time, residual image or blurriness may appear.
  - Change the mode to energy saving mode or set a screensaver to a changing picture when away from the monitor for an extended period of time.

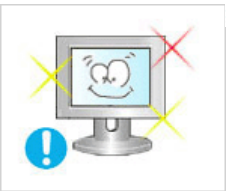


- Adjust the resolution and frequency to the level appropriate for the model.
  - An inappropriate resolution may cause undesirable picture quality.

    19 inch Wide (48 cm) - 1440 X 900



- Viewing the monitor continuously at a too close angle may result in damage to your eyesight.



- To ease eye strain, take at least a five-minute break after every hour of using the monitor.

- Do not install the product on an unstable, uneven surface or a location prone to vibrations.



- Dropping the product may cause damage to the product or the person carrying it. Using the product in a location prone to vibrations may shorten the lifetime of the product or may cause the product to catch fire.



When moving the monitor, turn off and unplug the power cord. Make sure that all cables, including the antenna cable and cables connected to other devices, are disconnected before moving the monitor.

- Failure to disconnect cables may damage it and cause fire or electric shock.



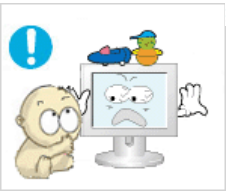
Place the product out of children's reach, as they could damage by hanging onto it.

- A falling product may cause injury to the person or even fatality.



When not using the product for an extended period of time, keep the product unplugged.

- Otherwise, this may cause heat emission from the accumulated dirt or degraded insulation, causing electric shock or fire.



Do not place your children's favorite toys or any other objects of interest on the product.

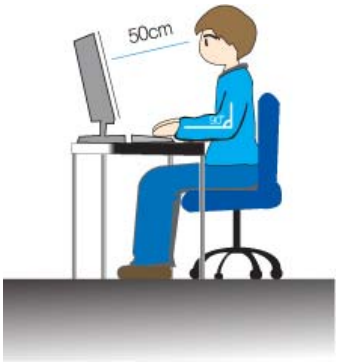
- Children may try to climb on the product to retrieve an object.
  The product could fall, causing injury or even fatality.



When lifting up or moving the monitor, do not lift the monitor upside down while holding only the stand.

- This may cause your monitor to fall, and become damaged or cause personal injury.

Good Postures When Using the Monitor



- Try to maintain a good posture when using the monitor.
  - Keep your back straight.
  - Keep a distance of about 45 ~ 50 cm between your eyes and the monitor screen. Look at the screen from slightly above it, and have the monitor directly in front of you.
  - Tilt the monitor upwards by 10 ~20 degrees. Adjust the monitor height so that the top of the monitor is slightly below eye level.
  - Adjust the monitor angle so that there is no reflected light on the screen.Try to maintain your arms perpendicular to your armpits.
  - Keep your arms level with the back of your hands.
  - Keep the angle of the elbow perpendicular.
  - Keep the angle of the knees at more than 90 degree. Do not let your feet fall up from the floor. Adjust the arm position so that it is below the heart.

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment) - Europe only



(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.



Features

RTA Monitor

RTA (Response Time Accelerator)

A function that accelerates the response speed of the panel so as to provide a sharper and more natural video display.

- RTA On — Activates the RTA function so that the panel operates at a higher response speed than its original speed.
- RTA OFF — Deactivates the RTA function so that the panel operates at its original response speed.

Features | Package Contents | Your Monitor

Package Contents

Please make sure the following items are included with your monitor.
If any items are missing, contact your dealer.
Contact a local dealer to buy optional items.

Unpacking

Without Stand



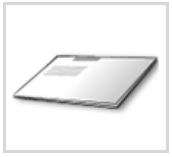
Monitor

With Stand



Monitor & Simple stand

Manual



Quick Setup Guide

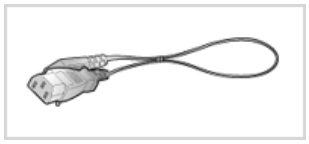


Warranty Card
(Not available in all locations)



User's Guide, Monitor Driver, Natural Color software, MagicTune™ software, ImageViewer

Cable



Power Cord



D-sub Cable

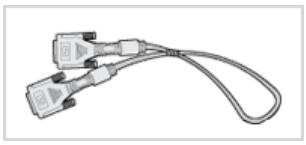
Others



Cleaning Cloth

※This is an accessory that can be added depending on the model.

Sold separately



DVI Cable

Your Monitor

Front



1	MENU button []	Opens the on-screen menu and exits from the menu.
2	MagicBright™ button []	MagicBright™ is a new feature providing optimum viewing environment depending on the contents of the image you are watching. Currently seven different modes are available: Custom, Text, Internet, Game, Sport and Movie, Dynamic Contrast. Each mode has its own pre-configured brightness value. You can easily select one of seven settings by simply pressing MagicBright™ control button. 1) Custom Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the brightness and contrast by using the OSD menu. 2) Text For documentations or works involving heavy text. 3) Internet For working with a mixture of images such as texts and graphics. 4) Game For watching motion pictures such as a game. 5) Sport For watching motion pictures such as a sport. 6) Movie For watching motion pictures such as a DVD or Video CD.

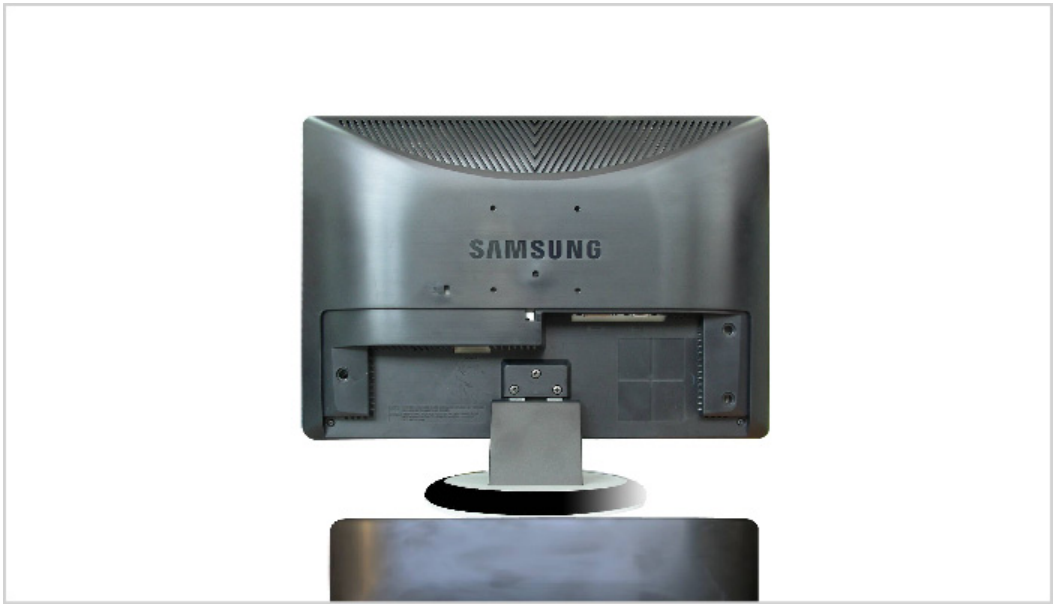
7) Dynamic Contrast
Dynamic Contrast is to automatically detect distribution of inputted visual signal and adjust to create optimum contrast.

>> Click here to see an animation clip

3	Brightness button [☼]	When OSD is not on the screen, push the button to adjust brightness. >> Click here to see an animation clip
2, 3	Adjust buttons [▼/▲]	Adjust items in the menu.
4	Enter button [⏎] / SOURCE button	Activates a highlighted menu item. / Push the 'SOURCE/⏎', then selects the video signal while the OSD is off. (When the 'SOURCE/⏎' button is pressed to change the input mode, a message appears in the upper left of the screen displaying the current mode -- analog or digital input signal.) ※ If you select the digital mode, you must connect your monitor to the graphic card's DVI port using the DVI cable.
5	AUTO button	Use this button for auto adjustment. >> Click here to see an animation clip
6	Power button [⏻]	Use this button for turning the monitor on and off.
	Power indicator	This light glows blue during normal operation, and blinking blue once as the monitor saves your adjustments.

※ See PowerSaver described in the manual for further information regarding power saving functions. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods.

Rear

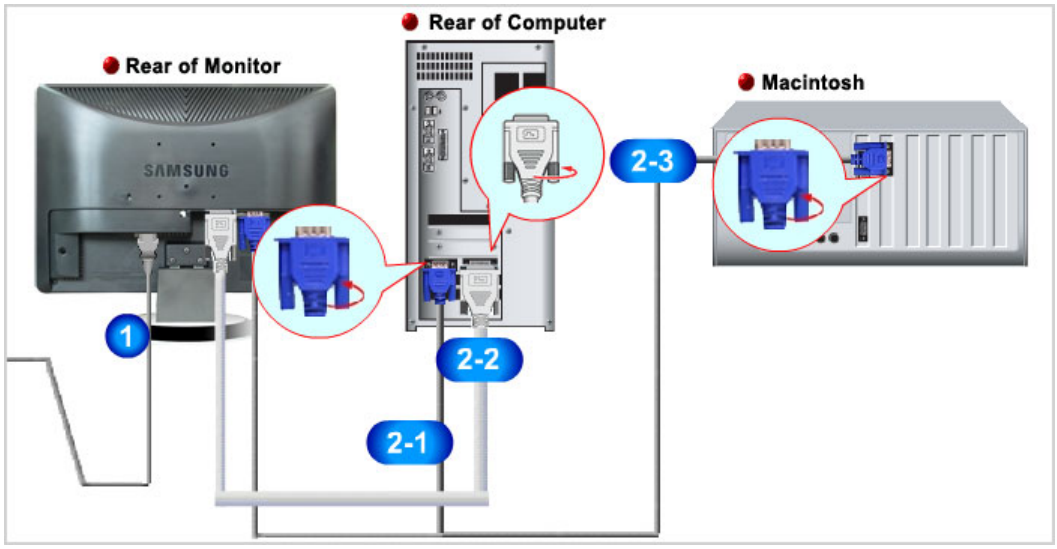


※ The configuration at the back of the monitor may vary from product to product.

1	POWER port	Connect the power cord for your monitor to the power port on the back of the monitor.
2	DVI IN port	Connect the DVI Cable to the DVI port on the back of your monitor.
3	RGB IN port	Connect the signal cable to the 15-pin, D-sub port on the back of your monitor.
4	Kensington Lock	The Kensington lock is a device used to physically fix the system when using it in a public place. ※ The locking device has to be purchased separately. For using a locking device, contact where you purchase it.

※ See Connecting Cables for further information regarding cable connections.

Connecting Cables



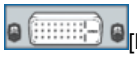
1 Connect the power cord for your monitor to the power port on the back of the monitor.
Plug the power cord for the monitor into a nearby outlet.

2 Use a connection appropriate for your computer.

2-1 Using the D-sub (Analog) connector on the video card.
- Connect the signal cable to the 15-pin, D-sub port on the back of your monitor.


[RGB IN]

2-2 Using the DVI (Digital) connector on the video card.
- Connect the DVI Cable to the DVI Port on the back of your Monitor.


[DVI IN]

2-3 Connected to a Macintosh.
-Connect the monitor to the Macintosh computer using the D-sub connection cable.

※ If the monitor and the computer are connected, you can turn them on and use them.

Connecting Cables Using the Stand

Using the Stand

Monitor Assembly



Monitor and Bottom

Attaching a Base

This monitor accepts a 75 mm x 75 mm VESA-compliant mounting interface pad.



A. Monitor

B. Mounting interface pad (Sold separately)

1. Turn off your monitor and unplug its power cord.
2. Lay the LCD monitor face-down on a flat surface with a cushion beneath it to protect the screen.
3. Remove three screws and then remove the stand from the LCD monitor.
4. Align the mounting interface pad with the holes in the rear cover mounting Pad and secure it with four screws that came with the arm-type base, wall mount hanger or other base.

- Do not use screws longer than the standard dimension, as they may damage the inside of the Monitor.

- For wall mounts that do not comply with VESA standard screw specifications, the length of the screws may differ depending on their specifications.
- Do not use screws that do not comply with the VESA standard screw specifications. Do not fasten the screws too tightly, as this may damage the product or cause the product to fall, leading to personal injury. Samsung is not liable for these kinds of accidents.
- Samsung is not liable for product damage or personal injury when a non-VESA or non-specified wall mount is used or the consumer fails to follow the product installation instructions.



- To mount the monitor on a wall, you should purchase the wall mounting kit that allows you to mount the monitor at least 10cm away from the wall surface.
- Contact the nearest Samsung Service Center for more information. Samsung Electronics will not be responsible for damages caused by using a base other than those specified.
- **Please use Wall Mount according to the International standards.**

Monitor Driver

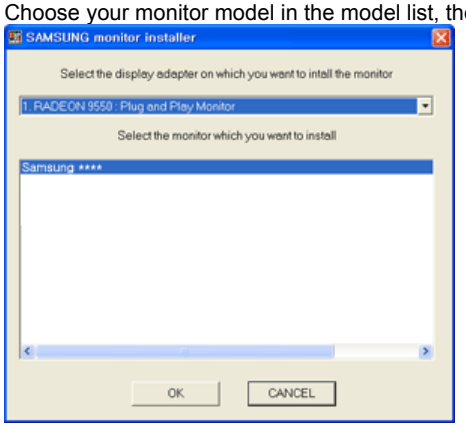
When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.

Prepare a blank disk and download the driver program file at the Internet web site shown here.

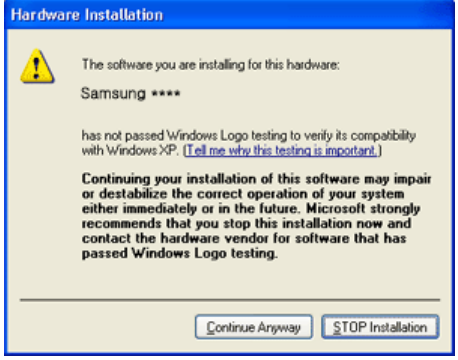
Internet web site :http://www.samsung.com/ (Worldwide)
http://www.samsung.com/monitor (U.S.A)
http://www.sec.co.kr/monitor (Korea)
http://www.samsungmonitor.com.cn/ (China)

Installing the Monitor Driver (Automatic)

1. Insert CD into the CD-ROM drive.
2. Click "**Windows**".
3. Choose your monitor model in the model list, then click the "OK" button.



4. If you can see following message window, then click the "Continue Anyway" button. Then click "OK" button (Microsoft® Windows® XP/2000 Operating System).



※ This monitor driver is under certifying MS logo, and this installation doesn't damage your system.
The certified driver will be posted on Samsung Monitor homepage

http://www.samsung.com/

5 Monitor driver installation is completed.

Installing the Monitor Driver (Manual)

Windows Vista | Windows XP | Windows 2000 | Windows ME | Windows NT | Linux

Microsoft® Windows Vista™Operating System

1 Insert your Manual CD into your CD-ROM drive.
2 Click (Start) and "Control Panel". Then, double-click on "Appearance and Personalization".



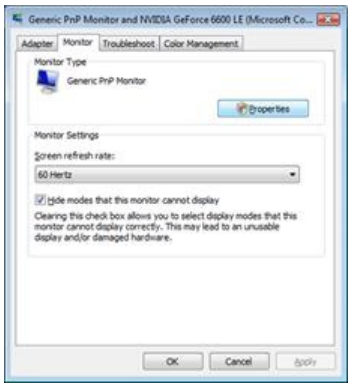

3 Click "Personalization" and then "Display Settings".




4 Click "Advanced Settings…".



5 Click "Properties" in the "Monitor" tab. If the "Properties" button is deactivated, it means the configuration for your monitor is completed. The monitor can be used as is.
If the message “Windows needs…” is displayed, as shown in the figure below, click "Continue".

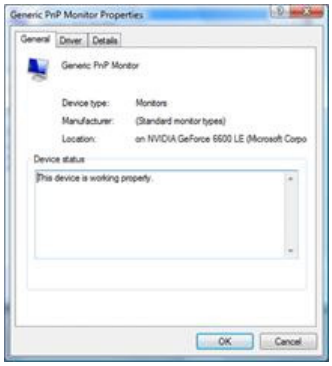


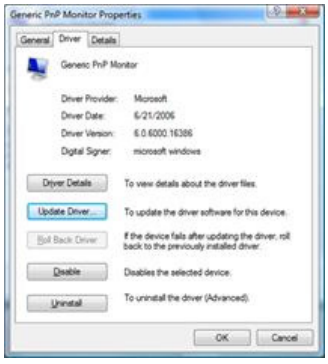


※ This monitor driver is under certifying MS logo, and this installation doesn't damage your system.
The certified driver will be posted on Samsung Monitor homepage

http://www.samsung.com/

6 Click "Update Driver…" in the "Driver" tab.





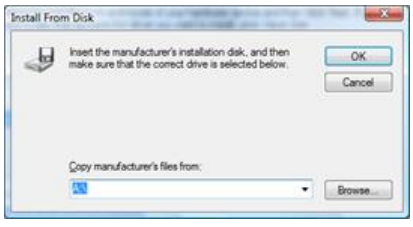
7 Check the "Browse my computer for driver software" checkbox and click "Let me pick from a list of device drivers on my computer".





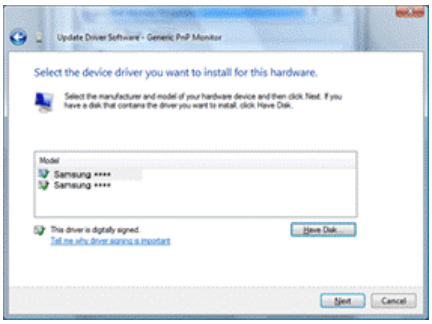
8 Click "Have Disk…" and select the folder (for example, D:\Drive) where the driver setup file is located, and click "OK".



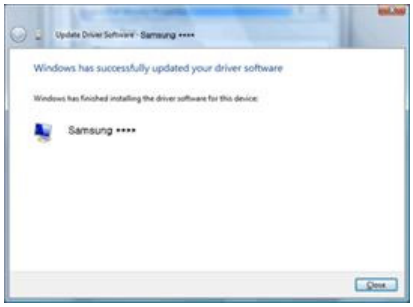


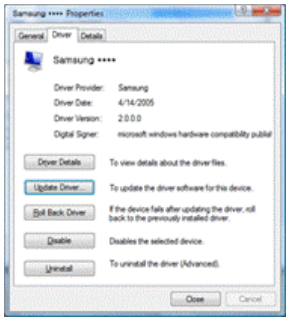
9

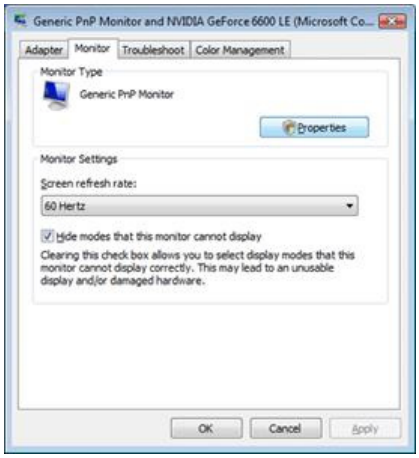
Select the model that matches your monitor from the list of monitor models on the screen, and click "Next".

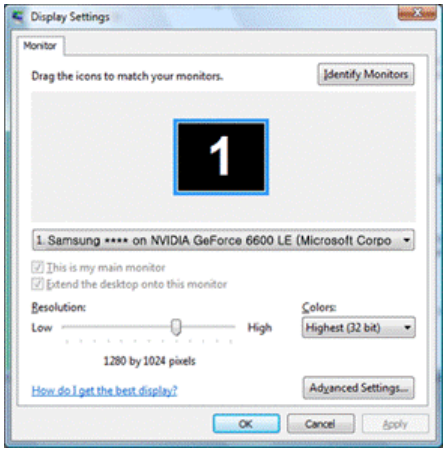


⑩ Click "Close"→ "Close" → "OK" → "OK" on the following screens displayed in sequence.







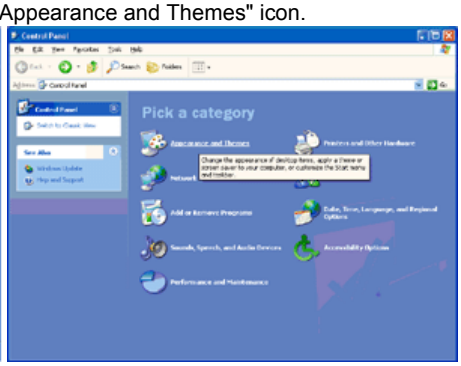


Microsoft® Windows® XP Operating System

❶ Insert CD into the CD-ROM drive.

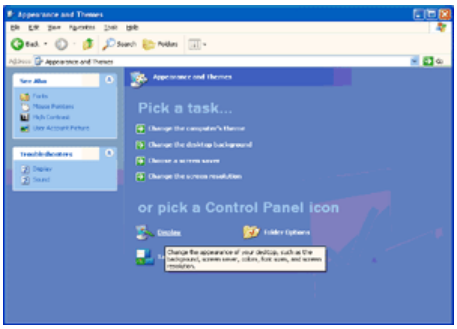
❷ Click "Start" → "Control Panel" then click the "Appearance and Themes" icon.

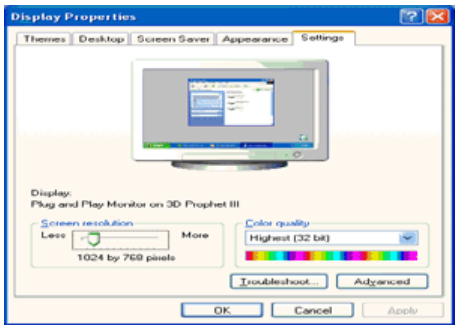




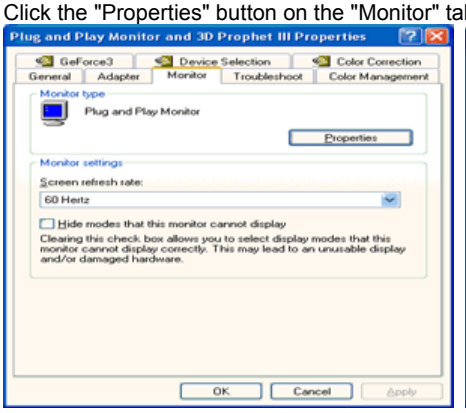
❸

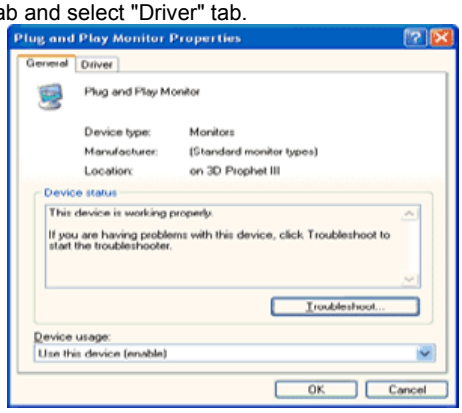
Click "Display" icon and choose the "Settings" tab then click "Advanced...".



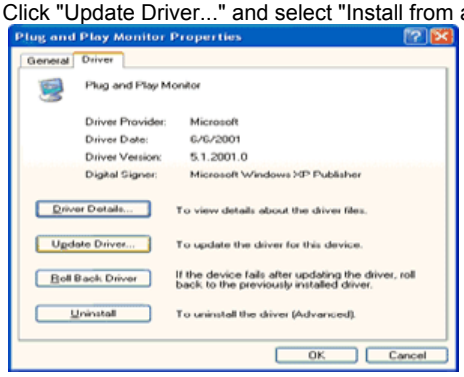


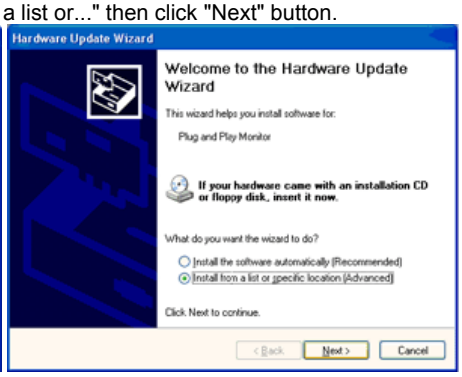
4 Click the "Properties" button on the "Monitor" tab and select "Driver" tab.



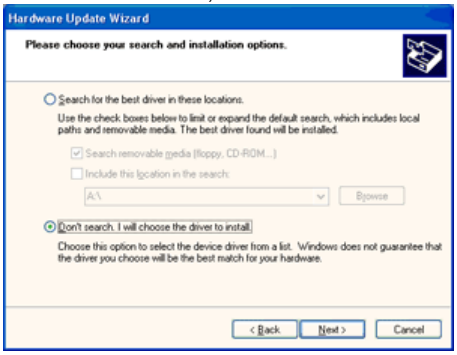


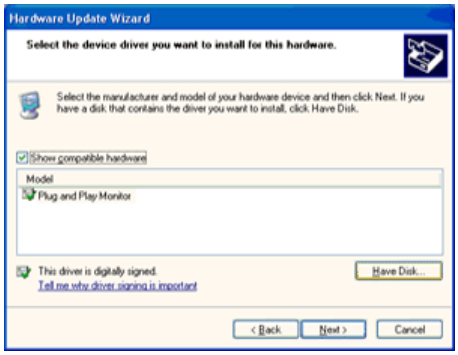
5 Click "Update Driver..." and select "Install from a list or..." then click "Next" button.





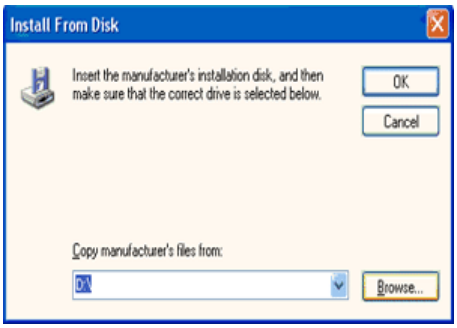
6 Select "Don't search ,I will..." then click "Next" and then click "Have disk".

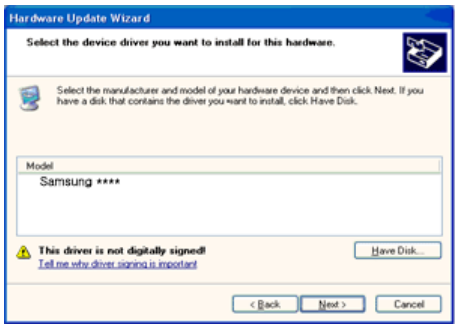




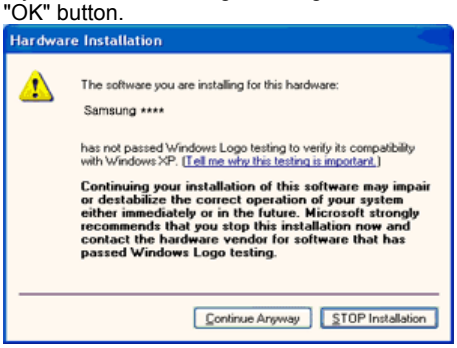
7

Click the "Browse" button then choose A:(D:\Driver) and choose your monitor model in the model list and click the "Next" button.





8 If you can see following "Message" window, then click the "Continue Anyway" button. Then click "OK" button.

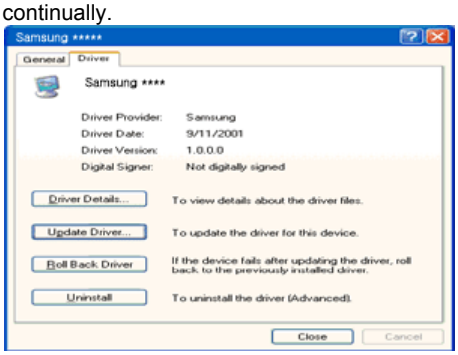


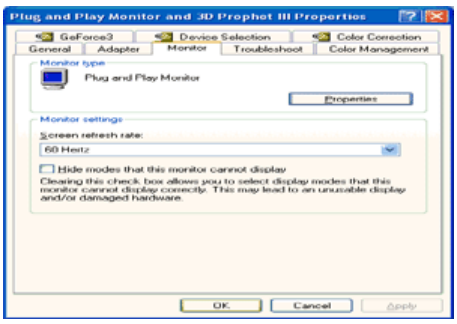
※ This monitor driver is under certifying MS logo, and this installation doesn't damage your system.
The certified driver will be posted on Samsung Monitor homepage

http://www.samsung.com/

9 Click the "Close" button then click "OK" button continually.







10 Monitor driver installation is completed.

Microsoft® Windows® 2000 Operating System

When you can see "Digital Signature Not Found" on your monitor, follow these steps.

1 Choose "OK" button on the "Insert disk" window.
2 Click the "Browse" button on the "File Needed" window.
3 Choose A:(D:\Driver) then click the "Open" button and then click "OK" button.

How to install

1. Click "Start" , "Setting" , "Control Panel".
2. Double click the "Display" icon.
3. Select the "Settings" tab and click "Advanced Properties" button.
4. Choose "Monitor".
   - Case1 : If the "Properties" button is inactive, it means your monitor is properly configured. Please stop installation
   - Case2 : If the "Properties" button is active, click the "Properties" button then follow next steps continually.
5. Click "Driver" and then click on "Update Driver..." then click on the "Next" button.
6. Choose "Display a list of the known drivers for this device so that I can choose a specific driver" then click "Next" and then click "Have disk".
7. Click the "Browse" button then choose A:(D:\Driver).
8. Click the "Open" button, then click "OK" button.
9. Choose your monitor model and click the "Next" button then click "Next" button.
10. Click the "Finish" button then the "Close" button.

If you can see the "Digital Signature Not Found" window then click the "Yes" button. And click the "Finish" button then the "Close" button.

Microsoft® Windows® Millennium Operating System

1. Click "Start" , "Setting" , "Control Panel".
2. Double click the "Display" icon.
3. Select the "Settings" tab and click "Advanced Properties" button.
4. Select the "Monitor" tab.
5. Click the "Change" button in the "Monitor Type" area.
6. Choose "Specify the location of the driver".
7. Choose "Display a list of all the driver in a specific location..." then click "Next" button.
8. Click the "Have Disk" button.
9. Specify A:\(D:\driver) then click "OK" button.
10. Select "Show all devices" and choose the monitor that corresponds to the one you connected to your computer and click "OK".
11. Continue choosing "Close" button and "OK" button until you close the Display Properties dialogue box.

Microsoft® Windows® NT Operating System

1. Click "Start", "Settings", "Control Panel", and then double-click "Display" icon.
2. In Display Registration Information window, click Settings Tab and then click "All Display Modes".
3. Select a mode that you wish to use (Resolution, Number of colors and Vertical frequency) and then click "OK".
4. Click "Apply" button if you see the screen working normally after clicking "Test". If the screen is not normal, change to a different mode (lower mode of resolution, colors or frequency).

※ If there is no Mode at All Display Modes, select the level of resolution and vertical frequency by referring to the Preset Timing Modes in the user guide.

Linux Operating System

To execute X-Window, you need to make the X86Config file, which is a type of system setting file.

1. Press "Enter" at the first and the second screen after executing the X86Config file.
2. The third screen is for setting your mouse.
3. Set a mouse for your computer.
4. The next screen is for selecting a keyboard.
5. Set a Keyboard for your computer.
6. The next screen is for setting your monitor.
7. First of all, set a horizontal frequency for your monitor. (You can enter the frequency directly.)
8. Set a vertical frequency for your monitor. (You can enter the frequency directly.)
9. "Enter" the model name of your monitor. This information will not affect the actual execution of X-Window.
10. You have finished setting up your monitor.
    Execute X-Window after setting other requested hardware.

Natural Color

Natural Color Software Program



One of the recent problems in using a computer is that the color of the images printed out by a printer or other images scanned by a scanner or a digital camera are not the same as those shown on the monitor. The Natural Color S/W is the very solution for this problem. It is a color administration system developed by Samsung Electronics in association with Korea Electronics & Telecommunications Research Institute (ETRI). This system is available only for Samsung monitors and makes the color of the images on the monitor the same as the printed or scanned images.
For more information, refer to Help (F1) in the software program.

How to install the Natural Color software

Insert the CD included with the Samsung monitor into the CD-ROM Drive. Then, the initial screen of the program Natural Color will be executed. Click Natural Color on the initial screen to install the Natural Color software.

To install the program manually, insert the CD included with the Samsung monitor into the CD-ROM Drive, click the [Start] button of Windows and then select [Run...].
Enter D:\color\NCProSetup.exe(64bit:D:\color_64\NCProSetup.exe) and then press the [Enter] key.
(If the drive where the CD is inserted is not D:\, enter the applicable drive.)

How to delete the Natural Color software program

Select "Setting/Control Panel" on the "Start" menu and then double-click "Add/Delete a program".
Select Natural Color from the list and then click the "Add/Delete" button.

Monitor Driver | Natural Color | MagicTune™ | ImageViewer

MagicTune™ HELP

Installation

1. Insert the installation CD into the CD-ROM drive.

2. Click the MagicTune™ installation file.
3. Select installation Language, Click "Next".
4. When the Installation Shield Wizard window appears, click "Next."
5. Select "I agree to the terms of the license agreement" to accept the terms of use.
6. Choose a folder to install the MagicTune™ program.
7. Click "Install."
8. The "Installation Status" window appears.
9. Click "Finish."
10. When the installation is complete, the MagicTune™ executable icon appears on your desktop.

Double-click the icon to start the program.



MagicTune™ execution icon may not appear depending on specification of computer system or monitor.
If that happens, press F5 Key.

Installation Problems (MagicTune™)

The installation of MagicTune™ can be affected by such factors as the video card, motherboard and the network environment.

System Requirements

OS

- Windows™ 2000
- Windows™ XP Home Edition
- Windows™ XP Professional
- Windows Vista™



It is recommended using MagicTune™ in Windows™ 2000 or later.

Hardware

- 32MB Memory above
- 60MB Hard disk space above

* For more information, visit the MagicTune™ website.

Uninstall

The MagicTune™ program can be removed only by using the "Add or Remove Programs" option of the Windows™ Control Panel.

Perform the following steps remove MagicTune™.

1. Go to [Task Tray] ' [Start] ' [Settings] and select [Control Panel] in the menu. If the program runs on Windows™ XP, go to [Control Panel] in the [Start] menu.
2. Click the "Add or Remove Programs" icon in Control Panel.
3. In the "Add or Remove Programs" screen, scroll down to find "MagicTune™". Click on it to highlight it.
4. Click the "Change/Remove" button to remove the program.

5. Click "Yes" to begin the uninstall process.
6. Wait until the "Uninstall Complete" dialog box appears.

Visit the MagicTune™ website for technical support for MagicTune™, FAQs (questions and answers) and software upgrades.



Installation

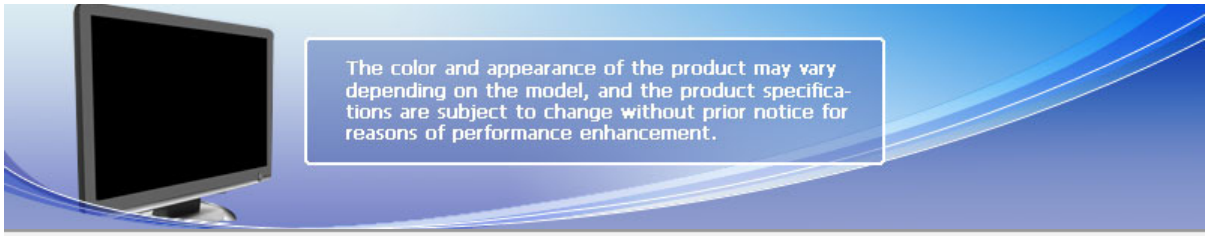
1. Insert the installation CD into the CD-ROM drive.
2. Click the Imageviewer installation file.
3. Select installation Language, Click "Next".
4. When the Installation Shield Wizard window appears, click "Next."
5. Select "I agree to the terms of the license agreement" to accept the terms of use.
6. Choose a folder to install the Imageviewer program.
7. Click "Install."
8. The "Installation Status" window appears.
9. Click "Finish."
10. When the installation is completed, the Imageviewer executable icon appears on your desktop.

    Double-click the icon to start the program.

Removing the Program

You can only remove ImageViewer by using the [Add/Remove Programs] applet.
To remove ImageViewer, follow these steps:

1. Click on the [Start] menu, and [Settings] and then the [Control Panel]. For Windows™ XP, click on the [Start] menu and then the [Control Panel].
2. Double-click the [Add/Remove Programs] icon on the [Control Panel].
3. Select ImageViewer by clicking on it on the [Add/Remove Programs] window. You may need to scroll down to find it.
4. Click [Change/Remove].
5. Click "Yes" to start removing ImageViewer.
6. Wait until the message that the removal is finished is displayed.
7. You should restart your computer to remove the program completely.



Adjusting the Monitor

Control Buttons Direct Functions OSD Function

Control Buttons



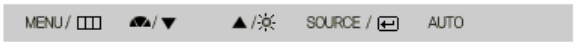
1. [MENU /] Opens the OSD menu. Also use to exit the OSD menu or return to the previous menu.
2. [▼/▲] These buttons allow you to adjust items in the menu.
3. [] Press this button to activate a highlighted menu item.
4. [AUTO] When the 'AUTO' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center.

Control Buttons Direct Functions OSD Function

Direct Functions

AUTO





Menu	Description
AUTO	When the 'AUTO' button is pressed, the Auto Adjustment screen appears as shown in the animated screen on the center. Auto adjustment allows the monitor to self-adjust to the incoming Analog signal. The values of fine, coarse and position are adjusted automatically. (Available in Analog mode only) To make the automatic adjustment function sharper, execute the 'AUTO' function while the AUTO PATTERN is on. ▸ If auto adjustment does not work properly, press 'AUTO' button again to adjust picture with more accuracy. ▸ If you change resolution in the control panel, auto function will be executed automatically.

OSD Lock & Unlock

- When pressing the AUTO after locking the OSD





When pressing the MENU button after locking the OSD

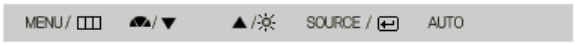




Menu	Description
OSD Locked & Unlock	This is the function that locks the OSD in order to keep the current states of settings or prevent others from adjusting the current settings. **Locked** : Hold down the menu button for more than five seconds to activate the OSD adjustment lock function. **Unlock** : Hold down the menu button for more than five seconds to deactivate the OSD adjustment lock function. ※ Though the OSD adjustment lock function is activated, you can still adjust the brightness and contrast, and adjust MagicBright ( ) using the Direct button.

MagicBright™

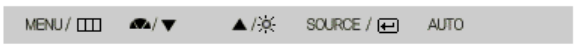




Menu	Description
MagicBright™	Push the MagicBright™ button to circle through available preconfigured modes. - seven different modes (Custom/Text/Internet/Game/Sport/Movie/Dynamic Contrast)

Brightness

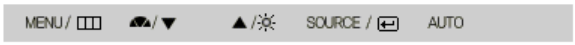




Menu	Description
Brightness	When OSD is not on the screen, push the button to adjust brightness.

SOURCE





Menu	Description
SOURCE	Selects the Video signal while the OSD is off. (Analog/Digital)

OSD Function

Picture	Brightness	Contrast			
Color	Color Innovation	Color Control	Gamma		
Image	Coarse	Fine	Sharpness	H-Position	V-Position
OSD	Language	H-Position	V-Position	Transparency	Display Time
Setup	Auto Source	Image Reset	Color Reset	RTA	
Information					

Picture





Menu	Description	Play/Stop
Brightness	You can use the on-screen menus to change the brightness according to personal preference. Direct Access Feature : When OSD is not on the screen, push the button to adjust brightness. >> Click here to see an animation clip MENU → ↵ → ↵ → ▲, ▼ → MENU	
Contrast	You can use the on-screen menus to change the contrast according to personal preference. MENU → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	

Color





Menu	Description	Play/Stop
Color Innovation	Color Innovation function provides optimized color for personal favor to view effectively with WCG-CCFL which was applied to Samsung Electronics for the first time. 1 Brilliant If you select "Brilliant", you can view a more clear and vibrant image 2 Mild If you select "Mild", you can view a more natural and soft image. 3 Custom The pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the Picture and Color menu by using the OSD to fit your eyes. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
Color Control	Adjusts individual Red, Green, Blue color balance. -Red, Green, Blue MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
Gamma	Gamma correction changes the luminance of the colors with intermediate luminance. - Mode 1 - Mode 2 - Mode 3 MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	

Image





Menu	Description	Play/Stop
Coarse	Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the horizontal control menu. MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU	

Fine	Removes noise such as horizontal stripes. If the noise persists even after fine tuning, repeat it after adjusting the frequency (clock speed). MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
Sharpness	Changes the clearance of image. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
H-Position	Changes the horizontal position of the monitor's entire display. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
V-Position	Changes the vertical position of the monitor's entire display. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	

OSD



Menu	Description	Play/Stop
Language	You can choose one of nine languages. • English, Deutsch, Español, Français, Italiano, Svenska, Русский , Português , Türkçe ※ The language chosen affects only the language of the OSD. It has no effect on any software running on the computer. MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU	
H-Position	You can change the horizontal position where the OSD menu appears on your monitor. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
V-Position	You can change the vertical position where the OSD menu appears on your monitor. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	

Transparency	Change the transparency of the background of the OSD. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
Display Time	The menu will be automatically turned off if no adjustments are made for a certain time period. You can set the amount of time the menu will wait before it is turned off. - 5 sec, 10 sec, 20 sec, 200 sec MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	

Setup





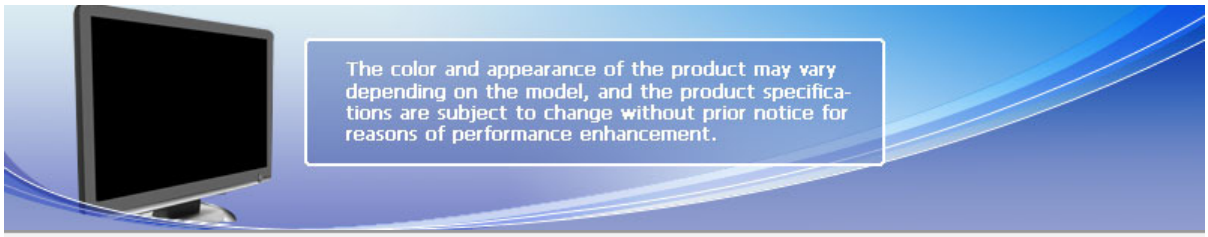
Menu	Description	Play/Stop
Auto Source	Select Auto Source for the monitor to automatically select the signal source. MENU → ▲, ▼ → ↵ → ↵ → ▲, ▼ → MENU	
Image Reset	Image parameters are replaced with the factory default values. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
Color Reset	Color parameters are replaced with the factory default values. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	
RTA	RTA (Response Time Accelerator) A function that accelerates the response speed of the panel so as to provide a sharper and more natural video display. RTA On : Activates the RTA function so that the panel operates at a higher response speed than its original speed. RTA Off : Deactivates the RTA function so that the panel operates at its original response speed. MENU → ▲, ▼ → ↵ → ▲, ▼ → ↵ → ▲, ▼ → MENU	

Information





Menu	Description
Information	Shows a video source, display mode on the OSD screen. MENU → ▲, ▼



Check List

Before calling for assistance, check the information in this section to see if you can remedy any problems yourself. If you do need assistance, please call the phone number on the Information section or contact your dealer.

Symptom	Check List	Solutions
No images on the screen. I cannot turn on the monitor.	Is the power cord connected properly?	Check the power cord connection and supply.
	Can you see "Check Signal Cable" on the screen?	(Connected using the D-sub cable) Check the signal cable connection. (Connected using the DVI cable) If you still see an error message on the screen when the monitor is connected properly, check to see if the monitor status is set to analog. Press 'SOURCE/⏎' button to have the monitor double-check the input signal source.
	If the power is on, reboot the computer to see the initial screen(the login screen), which can be seen.	If the initial screen (the login screen) appears, boot the computer in the applicable mode (the safe mode for Windows ME/XP/2000) and then change the frequency of the video card. (Refer to the Preset Timing Modes) If the initial screen (the login screen) does not appear, contact the Service Center or your dealer.
	Can you see "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" on the screen?	You can see this message when the signal from the video card exceeds the maximum resolution and frequency that the monitor can handle properly. Adjust the maximum resolution and frequency that the monitor can handle properly. If the display exceeds SXGA or 75 Hz, a "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" message is displayed. If the display exceeds 85 Hz, the display will work properly but the "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" message appears for one minute and then disappears. Please change to the recommended mode during this one-minute period. (The message is displayed again if the system is rebooted.)
	There is no image on the screen. Is the power	The monitor is in PowerSaver mode. Press a key on the keyboard to activate the monitor and

	indicator on the monitor blinking at 1 second intervals?	restore the image on the screen. If there is still no image, press the 'SOURCE/⏎' button. Then press any key on the keyboard again to activate the monitor and restore the image on the screen.
	Connected using the DVI cable?	You may get a blank screen if you boot the system before you connect the DVI cable, or disconnect and then reconnect the DVI cable while the system is running as certain types of graphic cards do not send out video signals. Connect the DVI cable and then reboot the system.
I cannot see the On Screen Display.	Have you locked the On Screen Display (OSD) Menu to prevent changes?	Unlock the OSD by pressing the [MENU / ▥] button for at least 5 seconds.
The screen shows strange colors or just black and white.	Is the screen displaying only one color as if looking at the screen through a cellophane paper?	Check the signal cable connection. Make sure the video card is fully inserted in it's slot.
	Have the screen colors become strange after running a program or due to a crash between applications?	Reboot the computer.
	Has the video card been set properly?	Set the video card by referring to the video card manual.
The screen suddenly has become unbalanced.	Have you changed the video card or the driver?	Adjust screen image position and size using the OSD.
	Have you adjusted the resolution or frequency to the monitor?	Adjust the resolution and frequency at the video card. (Refer to thePreset Timing Modes).
	The screen can be unbalanced due to the cycle of the video card signals. Readjust Position by referring to the OSD.	
The screen is out of focus or OSD cannot be adjusted.	Have you adjusted the resolution or frequency on the monitor?	Adjust the resolution and frequency of the video card. (Refer to the Preset Timing Modes).
LED is blinking but no images on the screen.	Is the frequency properly adjusted when checking the Display Timing on the menu?	Adjust the frequency properly by referring to the video card manual and the Preset Timing Modes. (The maximum frequency per resolution may differ from product to product.)
There are only 16 colors shown on the screen. The screen colors have changed after changing the video card.	Have the Windows colors been set properly?	Windows XP : Set the resolution at the Control Panel → Appearance and Themes → Display → Settings. Windows ME/2000 : Set the resolution at the Control Panel → Display → Settings.
	Has the video card been set properly?	Set the video card by referring to the video card manual.
There is a message that	Have you installed the monitor driver?	Install the monitor driver according to the Driver Installation Instructions.

reads "Unrecognized monitor, Plug & Play (VESA DDC) monitor found".	See the video card manual to see if the Plug & Play (VESA DDC) function can be supported.	Install the monitor driver according to the Driver Installation Instructions.
Check when MagicTune™ does not function properly.	MagicTune™ feature is found only on PC (VGA) with Window OS that supports Plug and Play.	* To check whether your PC is available for MagicTune™ feature, follow the steps below (When Windows is XP); Control Panel → Performance and Maintenance → System → Hardware → Device Manager → Monitors → After deleting Plug and Play monitor, find 'Plug and Play monitor' by searching new Hardware. MagicTune™ is an additional software for the monitor. Some graphic cards may not support your monitor. When you have a problem with the graphic card, visit our website to check the compatible graphic card list provided. http://www.samsung.com/monitor/magictune
MagicTune™ doesn't work properly.	Have you changed your PC or video graphic card?	Download the latest program. The program can be downloaded http://www.samsung.com/monitor/magictune
	Did you install the program?	Reboot the computer after installing the program for the first time. If a copy of the program is already installed, remove it, reboot the computer, and then install the program again. You need to reboot the computer for it to operate normally after installing or removing the program.

※ Visit the MagicTune™ website and download the installation software for MagicTune™ MAC.

Check the following items if there is trouble with the monitor.

- Check if the power cord and the video cables are properly connected to the computer.
- Check if the computer beeps more than 3 times when booting.
  (If it does, request an a service for the main board of the computer.)
- If you installed a new video card or if you assembled the PC, check if the installed the adapter(video) driver and the monitor driver.
- Check if the scanning ratio of the video screen is set to between 56 Hz ~ 75 Hz.
  (Do not exceed 75 Hz when using the maximum resolution.)
- If you have problems in installing the adapter (video) driver, boot the computer in Safe Mode, remove the Display Adapter in the "Control Panel → System → Device Administrator" and then reboot the computer to reinstall the adapter (video) driver.

※ If problems repeatedly occur, contact an authorized service center.

Q & A

Question	Answer
How can I change the frequency?	The frequency can be changed by reconfiguring the video card. Note that video card support can vary, depending on the version of the driver used. (Refer to the computer or the video card manual for details.)
How can I adjust the resolution?	Windows XP : Set the resolution in the Control Panel → Appearance and Themes → Display → Settings. Windows ME/2000 :

	Set the resolution in the Control Panel → Display → Settings. ※ Contact the video card manufacturer for details.
How can I set the Power Saving function?	Windows XP : Set the resolution in the Control Panel → Appearance and Themes → Display → Screen Saver. Set the function in the BIOS-SETUP of the computer. Windows ME/2000 : Set the resolution in the Control Panel → Display → Screen Saver. Set the function in the BIOS-SETUP of the computer. ※ Refer to the Windows/Computer Manual
How can I clean the outer case/LCD Panel?	Disconnect the power cord and then clean the monitor with a soft cloth, using either a cleaning solution or plain water. Do not leave any detergent or scratches on the case. Do not let any water enter the monitor.

Self-Test

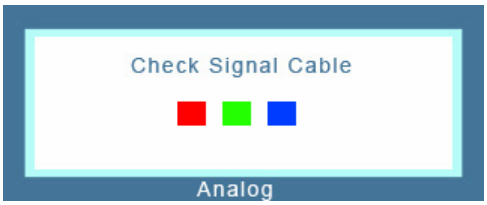
Self-Test Feature Check | Warning Messages | Environment | Useful Tips

Your monitor provides a self test feature that allows you to check whether your monitor is functioning properly.

Self-Test Feature Check

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.

   If the monitor is functioning properly, you will see a box in the illustration below.



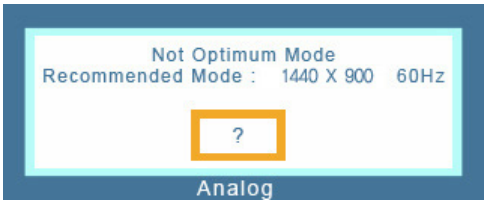
   This box appears during normal operation if the video cable becomes disconnected or damaged.

4. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.

   If your monitor screen remains blank after using the previous procedure, check your video controller and computer system; your monitor is functioning properly.

Warning Messages

If there is something wrong with the input signal, a message appears on the screen or the screen goes blank although the power indicator LED is still on. The message may indicate that the monitor is out of scan range or that you need to check the signal cable.



Environment

- The location and the position of the monitor may influence the quality and other features of the monitor.
  - If there are any sub woofer speakers near the monitor, unplug and relocate the woofer to another room.
    Remove all electronic devices such as radios, fans, clocks and telephones that are within 3 feet (one meter) of the monitor.

Useful Tips

- A monitor recreates visual signals received from the computer. Therefore, if there is a problem with the computer or the video card, this can cause the monitor to become blank, have poor coloring, become noisy, and video mode not supported, etc. In this case, first check the source of the problem, and then contact the Service Center or your dealer.

- Judging the monitor's working condition

  If there is no image on the screen or a "Not Optimum Mode", "Recommended Mode 1440 X 900 60 Hz" message comes up, disconnect the cable from the computer while the monitor is still powered on.

  - If there is a message coming up on the screen or if the screen goes white, this means the monitor is in working condition.
    In this case, check the computer for trouble.



Specifications

General

Model Name	SyncMaster 931CW / SyncMaster 906CW
LCD Panel	
Size	19 " Wide Diagonal (48 cm)
Display area	408.24 mm (H) x 255.15 mm (V)
Pixel Pitch	0.2835 mm (H) x 0.2835 mm (V)
Synchronization	
Horizontal	30 ~ 81 kHz
Vertical	56 ~ 75 Hz
Display Color	
16.2M Colors (6bit)	
Resolution	
Optimum resolution	1440 X 900@60 Hz
Maximum resolution	1440 X 900@75 Hz
Input Signal, Terminated	
RGB Analog, DVI Compliant Digital RGB, 0.7 Vp-p ± 5%, TTL level (V high ≥ 2.0V, V low ≤ 0.8V)	
Maximum Pixel Clock	
137 MHz (Analog,Digital)	
Power Supply	
AC 100 - 240V~ (+/- 10%), 50/60Hz	
Signal Cable	

15pin to 15pin D-sub cable, Detachable
DVI-D to DVI-D connector, Detachable, (Option)

Dimensions (W x H x D) / Weight

448.0 X 311.0 X 58.5 mm / 17.6 x 12.2 x 2.3 inch (Without Stand)
448.0 X 363.9 X 202.2 mm / 17.6 x 14.3 x 8.0 inch (With Stand) / 4.2 kg / 9.3 lbs

VESA Mounting Interface

75 mm x 75 mm (for use with Specialty(Arm) Mounting hardware.)

Environmental considerations

Operating	Temperature : 50 °F ~ 104 °F (10 °C ~ 40 °C) Humidity : 10 % ~ 80 %, non-condensing
Storage	Temperature : -4 °F ~113 °F (-20 °C ~ 45 °C) Humidity : 5 % ~ 95 %, non-condensing

Plug and Play Capability

This monitor can be installed on any Plug & Play compatible system. Interaction of the monitor and computer systems will provide the best operating conditions and monitor settings. In most cases, monitor installation will proceed automatically, unless the user wishes to select alternate settings.

Dot Acceptable

TFT LCD panel manufactured by using advanced semiconductor technology with precision of 1 ppm (one millionth) above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen. This is not from bad quality and you can use it without uneasiness.

For example, the number of TFT LCD sub pixels that is contained in this product are 3,888,000.

※ Design and specifications are subject to change without prior notice.

Class B Equipment (Information Communication equipment for residential use)

- This product complies with the Electromagnetic Compatibility Directives for residential use and can be used in all areas including common residential areas.

  (Class B equipment emits less electromagnetic waves than Class A equipment.)

PowerSaver

- This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPMS compliant video card installed in your computer. Use a software utility installed on your computer to set up this feature.

State	Normal Operation	Power saving mode	Power off (Power button) EPA/ENERGY 2000
Power Indicator	Blue	Blue, Blinking	OFF
Power Consumption	Less than 42 W	Less than 1 W	Less than 1 W

This monitor is EPA ENERGY STAR® compliant and ENERGY2000 compliant when used with a computer equipped with VESA DPMS functionality.
As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjust the screen as follows.

Preset Timing Modes

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31,469	70,086	25,175	+/-
IBM, 640 x 480	31,469	59,940	25,175	-/-
IBM, 720 x 400	31,469	70,087	28,322	-/+
MAC, 640 x 480	35,000	66,667	30,240	-/-
MAC, 832 x 624	49,726	74,551	57,284	-/-
MAC, 1152 x 870	68,681	75,062	100,000	-/-
VESA, 640 x 480	37,500	75,000	31,500	-/-
VESA, 640 x 480	37,861	72,809	31,500	-/-
VESA, 800 x 600	35,156	56,250	36,000	+/+
VESA, 800 x 600	37,879	60,317	40,000	+/+
VESA, 800 x 600	46,875	75,000	49,500	+/+
VESA, 800 x 600	48,077	72,188	50,000	+/+
VESA, 1024 x 768	48,363	60,004	65,000	-/-
VESA, 1024 x 768	56,476	70,069	75,000	-/-
VESA, 1024 x 768	60,023	75,029	78,750	+/+
VESA, 1152 x 864	67,500	75,000	108,000	+/+
VESA,1280 x 960	60,000	60,000	108,000	+/+
VESA,1280 x 1024	63,891	60,020	108,000	+/+
VESA,1280 x 1024	79,976	75,025	135,00	+/+
VESA, 1440 X 900	55,935	59,887	106,500	-/+
VESA, 1440 X 900	70,635	74,984	136,750	-/+



Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle and the inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit : kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called Vertical Frequency or Refresh Rate. Unit : Hz



Contact SAMSUNG WORLDWIDE

※ If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care center.

North America		
U.S.A	1-800-SAMSUNG (7267864)	http://www.samsung.com
CANADA	1-800-SAMSUNG (7267864)	http://www.samsung.com/ca
MEXICO	01-800-SAMSUNG (7267864)	http://www.samsung.com/mx
Latin America		
ARGENTINE	0800-333-3733	http://www.samsung.com/ar
BRAZIL	4004-0000	http://www.samsung.com/br
CHILE	800-726-7864 (SAMSUNG)	http://www.samsung.com/cl
COLOMBIA	01-8000112112	http://www.samsung.com.co
COSTA RICA	0-800-507-7267	http://www.samsung.com/latin
ECUADOR	1-800-10-7267	http://www.samsung.com/latin
EL SALVADOR	800-6225	http://www.samsung.com/latin
GUATEMALA	1-800-299-0013	http://www.samsung.com/latin
JAMAICA	1-800-234-7267	http://www.samsung.com/latin
PANAMA	800-7267	http://www.samsung.com/latin
PUERTO RICO	1-800-682-3180	http://www.samsung.com/latin
REP. DOMINICA	1-800-751-2676	http://www.samsung.com/latin
TRINIDAD & TOBAGO	1-800-7267-864	http://www.samsung.com/latin
VENEZUELA	0-800-100-5303	http://www.samsung.com/latin
Europe		

BELGIUM	02 201 2418	http://www.samsung.com/be
CZECH REPUBLIC	844 000 844	http://www.samsung.com/cz
	Distributor pro Českou republiku: Samsung Zrt., česka organizační složka Vyskočilova 4, 14000 Praha 4	
DENMARK	70 70 19 70	http://www.samsung.com/dk
FINLAND	030-6227 515	http://www.samsung.com/fi
FRANCE	3260 SAMSUNG(7267864) (€ 0,15/min)	http://www.samsung.com/fr
GERMANY	01805 - 121213 (€ 0,14/Min)	http://www.samsung.de
HUNGARY	06-80-SAMSUNG (7267864)	http://www.samsung.com/hu
ITALIA	800 SAMSUNG(7267864)	http://www.samsung.com/it
LUXEMBURG	0032 (0)2 201 24 18	http://www.samsung.lu
NETHERLANDS	0900 20 200 88 (€ 0,10/Min)	http://www.samsung.com/nl
NORWAY	815-56 480	http://www.samsung.com/no
POLAND	0 801 801 881	http://www.samsung.com/pl
PORTUGAL	80 8 200 128	http://www.samsung.com/pt
REPUBLIC OF IRELAND	0818 717 100	http://www.samsung.com/uk
SLOVAKIA	0800-SAMSUNG(7267864)	http://www.samsung.com/sk
SPAIN	902 10 11 30	http://www.samsung.com/es
SWEDEN	0771-400 200	http://www.samsung.com/se
SWITZERLAND	0800-7267864	http://www.samsung.com/ch
U.K	0870 SAMSUNG (7267864)	http://www.samsung.com/uk
CIS		
ESTONIA	800-7267	http://www.samsung.ee
LATVIA	800-7267	http://www.samsung.com/lv
LITHUANIA	8-800-77777	http://www.samsung.lt
KAZAKHSTAN	8 800 080 1188	http://www.samsung.kz
RUSSIA	8-800-200-0400	http://www.samsung.ru
UKRAINE	8-800-502-0000	http://www.samsung.com/ur
UZBEKISTAN	140-1234	http://www.samsung.uz
Asia Pacific		
AUSTRALIA	1300 362 603	http://www.samsung.com/au
CHINA	800-810-5858, 010- 6475 1880	http://www.samsung.com.cn
HONG KONG	3698 - 4698	http://www.samsung.com/hk

INDIA	3030 8282, 1800 1100 11	http://www.samsung.com/in
INDONESIA	0800-112-8888	http://www.samsung.com/id
JAPAN	0120-327-527	http://www.samsung.com/jp
MALAYSIA	1800-88-9999	http://www.samsung.com/my
PHILIPPINES	1800-10-SAMSUNG (7267864)	http://www.samsung.com/ph
SINGAPORE	1800-SAMSUNG (7267864)	http://www.samsung.com/sg
THAILAND	1800-29-3232, 02-689-3232	http://www.samsung.com/th
TAIWAN	0800-329-999	http://www.samsung.com/tw
VIETNAM	1 800 588 889	http://www.samsung.com/vn
Middle East & Africa		
SOUTH AFRICA	0860 7267864 (SAMSUNG)	http://www.samsung.com/za
U.A.E	800SAMSUNG (7267864) 8000-4726	http://www.samsung.com/mea

Terms

Dot Pitch

- The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit : mm

Vertical Frequency

- The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called the Vertical Frequency or Refresh Rate.
  Unit : Hz

  Example : If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

Horizontal Frequency

- The time to scan one line connecting the right edge to the left edge of the screen horizontally is called the Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency.
  Unit : kHz

Interlace and Non-Interlace Methods

- Showing the horizontal lines of the screen from the top to the bottom sequentially is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

Plug & Play

- This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

Resolution

- The number of horizontal and vertical dots used to compose the screen image is called the 'resolution'. This number shows the accuracy of the display. A high resolution is good for performing multiple tasks as more image information can be shown on the screen.

  Example :If the resolution is 1440 X 900 , this means the screen is composed of 1440 horizontal dots (horizontal resolution) and 900 vertical lines (vertical resolution).

For Better Display

- Adjust computer resolution and screen injection rate (refresh rate) oncomputer as described below to enjoy the best quality of picture. You can have an uneven quality of picture in the screen if the best quality of picture is not provided in TFT-LCD.
  - Resolution : 1440 X 900
  - Vertical frequency (refresh rate) : 60 Hz
- TFT LCD panel manufactured by using advanced semiconductor technology with precision of 1ppm (one millionth) above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen.
  This is not from bad quality and you can use it without uneasiness.
  - For example, the number of TFT LCD sub pixels that is contained in this product are 3,888,000.
- When cleaning the monitor and the panel outside, please apply the recommended small amount of cleaner by using a soft cloth to polish. Do not force the LCD area but rub softly.
  If excessive force is applied, you may stain it.
- If you are not satisfied with the picture quality, you can get better quality of picture by performing the "auto adjustment function" in display screen that is appeared as window termination button is pressed.
  If there's still noise after the automatic adjustment, use the FINE/COARSE adjustment function.
- If you view a fixed screen for an extended period of time, residual image or blurriness may appear. Change the mode to energy save or set a screensaver to moving picture when you need to be away from the monitor for an extended period of time.

Contact SAMSUNG WORLDWIDE Terms For Better Display Authority

Authority

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MÉXICO

IMPORTADO POR: SAMSUNG ELECTRONICS MÉXICO. S.A. de C.V.
Vía Lopez Portillo No. 6, Col. San Fco. Chilpan
Tultitlán, Estado de México, C.P. 54940
Tel: 01-55-5747-5100 / 01-800-726-7864

EXPORTADO POR: Samsung Electronics CO.,LTD.
416, Mae tan-3dong, Yeongtong - gu,
Suwon City, Gyeonggi-do Korea

PRODUCT INFORMATION (Image Retention Free)

LCD Monitors and TVs may have image retention when switching from one image to another especially after displaying a stationary image for a long time.
This guide is to demonstrate correct usage of LCD products in order to protect them from Image retention.

- **Warranty**
  Warranty does not cover any damage caused by image retention.
  Burn-in is not covered by the warranty.

- **What is Image retention ?**
  During normal operation of a LCD panel, pixel image retention doesn't occur. However, if the same image is displayed for a long time, a slight difference in electric charge accumulates between the two electrodes which encase the liquid crystal. This may cause the liquid crystal to build up in a certain areas of the display. Thus, the previous image is retained when switching to a new video image. All display products, including LCD,are subject to image retention. This is not a product defect.

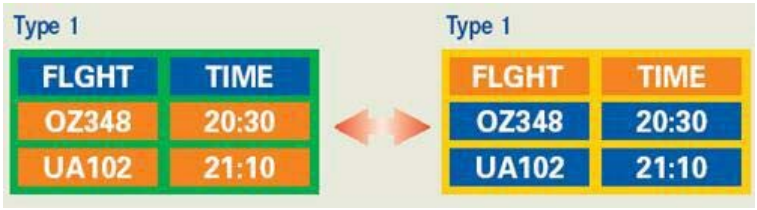
  Please follow the suggestions below to protect your LCD from image retention

- **Power Off, Screen Saver, or Power Save Mode**
  Ex)
  - Turn the power off when using a stationary pattern.
    - Turn the power off for 4 hours after 20 hours in use
    - Turn the power off for 2 hours after 12 hours in use
  - Use a Screen saver if possible
    - Screen saver in one color or a moving image is recommended.
  - Set the Monitor to power off with the PC Display Properties Power Scheme.

- **Suggestions for specific applications**
  Ex) Airports, Transit Stations, Stock Markets, Banks, and Controlling Systems
  We recommend that you follow set up of your display system program as below:

- **Display Information together with Logo or Moving image cycle.**
  Ex) Cycle : Display Information for 1 hour followed by a
  Display Logo or moving image for 1 minute.

- **Change the Color Information periodically (Use 2 different colors).**
  Ex) Rotate the Color Information with 2 colors every 30 minutes.



Avoid using a combination of characters and background color with large difference in luminance.
Avoid using Grey colors, which can cause Image retention easily.

- Avoid: Colors with big difference in luminance (Black & White, Grey)

Ex)



- Recommended settings: Bright colors with little difference in luminance

- Change the characters color and background color every 30 minutes

Ex)



- Every 30 minutes, change the characters with movement.

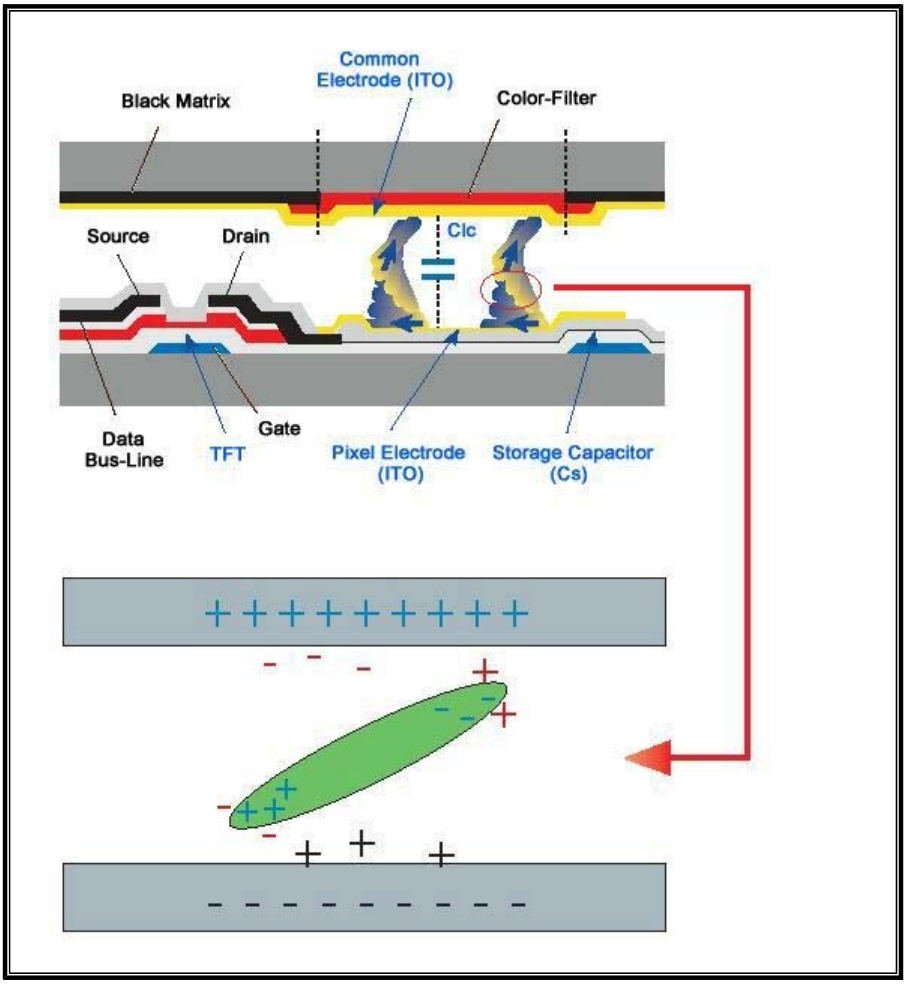
Ex)



- **The best way to protect your monitor from Image retention is to set your PC or System to operate a Screen Saver program when you are not using it.**

  Image retention may not occur when a LCD panel is operated under normal conditions.

  Normal conditions are defined as continuously changing video patterns. When the LCD panel is operated for a long time with a fixed pattern (-over 12 hours-), there may be slight difference in voltage between electrodes that work the liquid crystal (LC) in a pixel. The voltage difference between electrodes increases with time, forcing the liquid crystal to lean. When this occurs, the previous image may be seen when the pattern is changed.
  To prevent this, the accumulated voltage difference must be decreased.



- Our LCD Monitor satisfies ISO13406-2 Pixel fault Class II